

### **REMARKS**

Claims 1-4 and 6-20 are now pending in the application. Claim 20 is cancelled. Claims 1 and 10 are amended. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **OBJECTIONS TO THE DRAWINGS**

Figure 2 is amended to correct the flattened linked list. Figure 2 is now correct in view of the description as originally filed at pages 8-10, and essentially corresponds to the originally filed Figure 2, except for the replacement of the letter "e" with the letter "i" in the lexical tree structure of Figure 2. Figures 4a and 4b are also amended as suggested by the Examiner.

### **OBJECTIONS TO THE SPECIFICATION**

Applicants have amended paragraphs of the specification to define variables at page 14 as requested by the Examiner, and to cause the description of Figure 4a to accord with the changes required by the Examiner. Regarding the algorithm at page 14, it should be readily understood that the algorithm describes a single recursion that can be accomplished iteratively. Accordingly, it is of no consequence that it is unclear whether there is a preexisting active node list. Rather, one skilled in the art will readily recognize that the active node list is initially empty, and is filled by iterative application of the algorithm, with iterative applications acting on the current active node list obtained from the previous iteration. This functionality is especially clear in context of Figure 5 and related discussion, wherein a hand trace is performed.

### REJECTION UNDER 35 U.S.C. § 103

Claims 1, 3 and 6-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kao (U.S. Pat. No. 6,374,222) in view of Mitchell et al. (U.S. Pat. No. 6,574,595). This rejection is respectfully traversed.

Claims 2, 4 and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kao (U.S. Pat. No. 6,374,222) in view of Mitchell et al. (U.S. Pat. No. 6,574,595) and further "in view of well known art" (MPEP 2144.03). This rejection is respectfully traversed.

Applicants have amended Claims 1 and 10. As amended, Claims 1 and 10 recite "said traversal algorithm includes a dynamic programming process that assigns probability scores to nodes that are traversed using a forward recursion, thereby computing the scores based only on knowledge of child nodes." Support for the amendments may be found in the Specification as originally filed at p.15, lines 2-15, which states:

The preferred algorithm dynamically reduces its search space at each successive iteration by identifying the nodes that currently have the highest probability of matching the input utterance. The algorithm identifies these nodes as the next active nodes. It uses these nodes, and only these nodes, in its subsequent iteration.

As the algorithm visits each node, it computes the probability score of that node. If we define the loop and incoming probabilities as  $l_k = a_{k,k}$  and  $i_k = a_{k^*,k}$ . The score  $s_k(\cdot)$  at time  $t+1$  can be computed as:

$s_k(t+1) = \max\{s_k(t) + l_k, s_{k^*}(t) + i_k\} + d_k(t)$ .

Note that the algorithm uses  $t$  and  $t+1$  instead of  $t$  and  $t-1$  to denote a *forward* recursion instead of a *backwards* recursion. The ultimate goal is to compute a score based on knowledge of child nodes only (i.e., from  $k^*$  and not from  $k$ ) to avoid use of back-pointers (i.e., knowledge of the parent node).

Kao and Mitchell do not disclose a forward recursion. The recited differences are significant because the forward recursion allows dynamic reduction of the search space at each successive iteration to occur. Accordingly, neither Kao nor Mitchell, alone or combined, teach, suggest, or motivate all of the limitations of independent claims 1 and 10.

Applicants respectfully request the Examiner to withdraw the objection of independent claims 1 and 10 under 35 U.S.C. 103, along with rejection on these grounds of all claims dependent therefrom.

## CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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